Chapter Five

DEVELOPMENT CONCEPT

DEVELOPMENT CONCEPT

The planning process has evolved through several analytic efforts in the previous chapters. These efforts intended to analyze future aviation demand, establish airside and landside needs, and evaluate options for the future development of the airport and its facilities.

In the previous chapter, several development alternatives were analyzed to explore different options for the future growth and development of Seligman Airport. The development alternatives were refined into a single recommended concept for the terminal area plan after meeting with the Planning Advisory Committee (PAC) which provided feedback to the consultant. It is expected that this concept could be further refined after the final review meeting with the PAC. This chapter describes, in narrative and graphic form, the recommended direction for the future use and development of Seligman Airport.

RECOMMENDED CONCEPT

The recommended development concept incorporates the airfield development proposed in Airfield Alternative 2 and the improvements suggested in Landside Alternative B with new concepts added to the alternative. The recommended concept provides the airport with the availability to meet the increasing aviation demands on the airport for small general aviation aircraft operators, while also including development concepts for accommod-ating corporate aircraft operators.

The finalized concept provides for both anticipated facility needs over the next twenty years, as well as for some facility needs beyond the planning period. The following sections summarize specific airside and landside recommendations included in the final concept. The recommended concept is shown on **Exhibit 5A**.

AIRFIELD DESIGN STANDARDS

The Federal Aviation Administration (FAA) and the Arizona Department of Transportation (ADOT) - Aeronautics Division have established design criteria to define the physical dimensions of runways and taxiways, and the imaginary surfaces surrounding them which protect the safe operation of aircraft at the airport. These design standards also define the separation criteria for the placement of landside facilities.

As discussed previously, FAA and ADOT design criteria primarily center around the airport's critical design aircraft. The critical aircraft is the most demanding aircraft or family of aircraft which will conduct 500 or more operations (take-offs or landings) per year at the airport. Factors included in airport design are an aircraft's wingspan, approach speed and, in some cases, the runway approach visibility minimums. The FAA has established an Airport Reference Code (ARC) to relate these factors to airfield design standards.

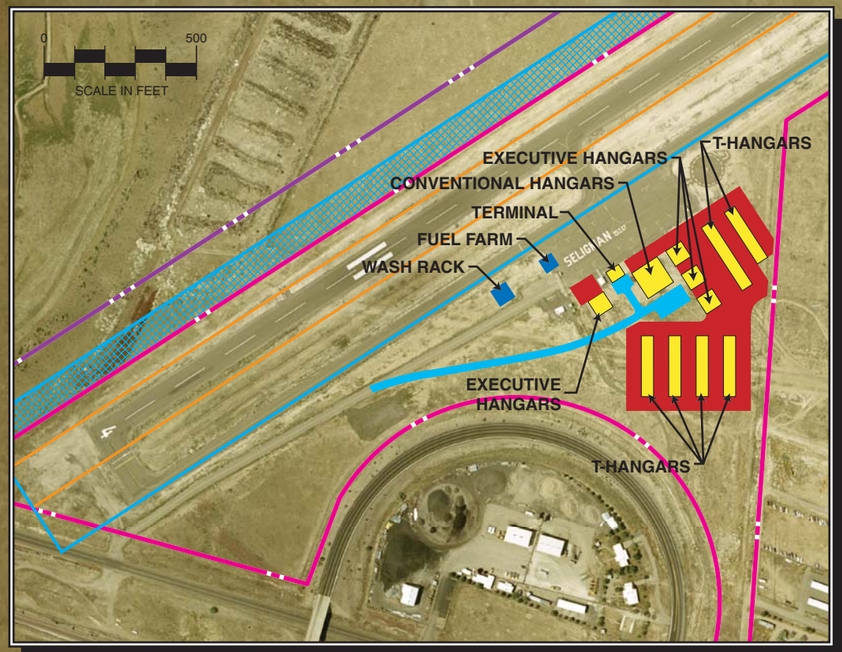
Seligman Airport is presently used by a variety of general aviation aircraft. The majority of these aircraft include single and multi-engine aircraft which range between ARC A-I and B-I categories. On occasion, the airport is utilized by larger aircraft in ARC B-II (e.g., Beech King Air).

Analysis conducted in Chapter Three, Facility Requirements, concluded that Seligman Airport's current critical design aircraft is the ARC B-I aircraft. The majority of operations are performed by single engine aircraft, with a large portion of the activity generated by pilot training from Embry Riddle Aeronautical University (ERAU). Also, the airport attracts several weekend "fly-in" events which capitalize on the tourism opportunity of Historic Route 66 and the Town of Seligman. These fly-ins typically attract single engine aircraft.

In the future, it is anticipated that this type of activity will remain dominant, however, more aircraft in ARC B-II will utilize the airport. ARC B-II aircraft such as the King Air or small business jets are commonly used for medical transportation services. Given the relatively remote location of Seligman, planning for medical transportation needs is critical. For this reason, the ultimate plan considers the need for the airfield to conform to ARC B-II standards. As a result, the development concept considers meeting the needs of ARC B-II aircraft in the long term. The plan anticipates that turbine aircraft use would increase in the future consistent with national trends and FAA forecasts.

For planning purposes, the future critical aircraft for Seligman Airport will be ARC B-II. Planning for ARC B-II aircraft will allow the airport to accommodate nearly all piston general aviation aircraft and half of the business jet aircraft in the fleet today. Moreover, meeting ARC B-II design requirements will ensure that the airport is suitable to meet the existing and future demands of medical transportation operators and many business jet operators, ensuring that Seligman Airport will remain

02MP20-5A-3/4/04



AWOS SITE 2

500'

LEGEND

- Existing Airport Property Line
- Ultimate Property Line
- Ultimate Airfield Pavement
- Ultimate Building
- Ultimate Road/Parking
- Runway Safety Area (RSA)
- Obstructed RSA
- Object Free Area (OFA)
- Obstructed OFA
- Runway Protection Zone (RPZ)

NORTH

0 800 1600

SCALE IN FEET

Date of Photo: 5/25/03

SELIGMAN AIRPORT

Exhibit 5A
RECOMMENDED DEVELOPMENT CONCEPT

competitive with other regional airports.

It should also be noted that the airport will be key in supporting the economic growth of the Town of Seligman. The airport serves as a critical spoke in the hub of economic development for any community. This is true of Seligman as well. In fact, Seligman Airport is even more valuable to the Town as it is owned, operated, and maintained by Yavapai County, resulting in the local availability and access to a key commodity while having no capital investment or maintenance costs.

The recommended concept, shown on **Exhibit 5A**, includes recommendations provided on Airfield Alternative 2 presented in the previous chapter. Of primary consideration, Alternative 2 provides a runway length fully capable of accommodating ARC B-II aircraft needs, especially during hot weather conditions. Accordingly, the plan includes the extension of Runway 4-22 1,900 feet northeast. This extension will allow the runway to provide adequate operational length for the full array of ARC B-II aircraft including many business jets carrying moderate loads.

In order to extend the runway to the northeast, additional property needs to be acquired. As depicted, the plan includes the future acquisition of 63.2 acres including 16.6 acres along the southwestern portion of the runway and 46.6 acres at the northern end of the runway. Moreover, the plan includes rerouting the drainage channel under the runway extension through piping and/or box culvert. The resultant plan will provide a runway capable of serving ARC B-II, that also meets FAA and ADOT safety standards.

The recommended concept considers maintaining the existing runway width and upgrading pavement strength for Runway 4-22. The runway is currently 75 feet wide, meeting FAA criteria for ARC B-II aircraft design. Also, the existing pavement strength is not adequate to accommodate large aircraft (those weighing more than 12,500 pounds) on a regular basis. The plan considers upgrading the pavement strength to at least 25,000 pounds single wheel gear loading (SWL) strength.

It should be noted that the RSA requirements include a stabilized area capable of supporting the design aircraft during over-run or undershoot operations. The existing RSAs, both north and south, do not conform to FAA standards for ARC B-II aircraft. Both RSAs should be improved 300 feet beyond the runway pavement edge and 75 feet to either side of the runway centerline (150 feet total width) in the future.

The plan also considers meeting FAA runway object free area (OFA) standards. As mentioned in the previous chapter, the existing and future OFA is hindered at the southwestern corner and along the southeastern portion of the runway by perimeter fencing. The plan includes the acquisition of property to the northwest and northeast from the Navajo Nation. The property could be fully acquired fee simple or through an avigation or other easement. The intent is to simply move the fence line outside the OFA, as the ultimate development concept does not include placing

facilities on the northern side of the airport. As a result, the fence needs to be relocated 101 feet further north. The perimeter fence will need to be relocated at the southwesternmost corner of the airport as well.

The recommended development concept includes taxiway improvements. The existing parallel taxiway is located 240 feet east of the runway. As depicted on **Exhibit 5A**, the recommended concept includes the extension of the parallel taxiway located 240 feet east of Runway 4-22. Also depicted is the addition of an entrance/exit taxiway located at the extended end of the runway.

The design of taxiway and apron areas must also consider the critical aircraft identified for Seligman Airport. The primary consideration is given to the wingspan of the most demanding aircraft to operate at the airport. The parallel and connecting taxiways, transient apron areas, and aircraft maintenance areas have all been designed to accommodate aircraft within ADG II.

As previously mentioned, analysis in previous chapters indicated that plans should be made to upgrade the instrument approach capabilities of the airport. Currently, Seligman Airport is not served by an instrument approach procedure. In the future, the airport could be served by a global positioning system (GPS) approach providing minimums with greater than one mile visibility. For this reason, future plans consider the implementation of a not lower than one mile approach to Runway 22. It is planned that GPS will provide this opportunity in the future. Runway 4 is not being planned for an instrument approach.

The existing runway protection zones (RPZs) for both runway ends extend beyond the existing airport property boundary. FAA standards for RPZs would require the County to obtain property rights, either in the form of an avigation easement or in fee simple. The FAA would prefer fee simple acquisition of properties in the RPZ, but avigation easements are acceptable under certain circumstances. Fee simple acquisition is recommended and planned for the northeastern RPZ.

The plan recommends obtaining avigation easements for the area in the southwest RPZ. This area is highly unlikely to be developed as it is traversed by Historic Route 66 and a rail line. The remaining area is likely to remain undeveloped. Avigation easements give the County the rights of certain airspace over a given property. The height is limited in such a manner that approaches and departures will not be obstructed by future development in the approach. In addition, development that would encourage a congregation of people in the RPZ would be prohibited.

LANDSIDE

The primary goal of landside facility planning is to provide adequate spaces while also maximizing operational efficiencies and land uses. Achieving this goal yields a development scheme which segregates aircraft users (large vs. small aircraft) while maximizing the airport's revenue potential.

Exhibit 5A depicts the recommended landside development plan for the airport. As depicted, the plan includes aviation facility development in and

around the existing aircraft apron and restroom facilities. The plan considers allowing the apron to serve as the future development focal point, or flight line.

The existing terminal facilities consist of the apron, sheltered restroom, and electrical vault/storage. The recommended plan considers the development of a terminal building facility to be consolidated with the existing restroom facility. The terminal area is supported with a road providing a direct link to Historic Route 66 to the south. This road is planned to be rerouted to allow future development expansion potential south of the existing apron. Furthermore, the road would lead into a proposed parking lot which would serve the terminal building and hangar facilities.

It is envisioned that corporate and other larger aircraft needs will be met with facilities at the north and south ends of the apron. The plan considers developing two 100-foot by 100-foot hangars centrally on the existing apron. Also, the plan calls for the southerly extension of the apron to accommodate corporate/executive hangars (60-foot by 60-foot). The expansion could support larger hangars such as 80-foot by 80-foot as well.

Immediately east of the proposed flight line, T-hangars are planned. As depicted, the T-hangar area could support four T-hangar facilities providing 50 individual storage units. The plan calls for the development of a taxilane leading from the northern edge of the existing apron. This taxilane would provide ingress/egress with the T-hangar area as well as a planned aircraft wash rack just north of the existing apron and planned taxiway.

The ultimate landside plan far exceeds the needs and goal of this planning effort. Consideration of facility development beyond the scope of this planning effort will, however, provide the County with a vision which will yield a first-class aviation facility capable of generating revenues which exceed operational costs. It should be noted that the development of all facilities should consider aesthetics a high priority. The airport is often the first and last impression that the airport user has of the community. Consideration should always be given to the development of facilities which meet aviation demand while presenting a positive image to all users.

CAPITAL IMPROVEMENT PROGRAM

The analyses conducted in the previous chapters evaluated airport development needs based upon safety, security, potential aviation activity, and operational efficiency. However, one of the more important elements of the master planning process is the application of basic economic, financial, and management rationale to each development item so that the feasibility of implementation can be assured. The purpose of this chapter is to identify capital needs at Seligman Airport and identify when these needs should be implemented according to need, function, and demand.

The presentation of the financial program contains two distinct categories. First, the airport's capital

needs are presented in narrative and graphic form. Secondly, funding sources on the federal and local levels are identified and discussed. The following sections outline the program's funding requirements and potential revenue sources.

DEMAND-BASED PLAN

The Master Plan for Seligman Airport has been developed according to a demand-based schedule. Demand-based planning refers to the intention to develop planning guidelines for the airport based upon airport activity levels, instead of guidelines based on points in time. By doing so, the levels of activity derived from the demand forecasts can be related to the actual capital investments needed to safely and efficiently accommodate the level of demand being experienced at the airport. More specifically, the intention of this Master Plan is that the facility improvements needed to serve new levels of demand should only be implemented when the levels of demand experienced at the airport justify their implementation.

For example, the aviation demand forecasts projected that based aircraft could be expected to grow through the year 2025. This forecast was supported by strong growth in the region in many areas including economic and aircraft ownership.

The forecasts noted, however, that future based aircraft levels will be dependent upon a number of economic factors. These factors could slow or accelerate based aircraft levels differently than projected in the aviation demand forecasts. Since changes in these factors cannot be realistically predicted for the entire forecast period, it is difficult to predict, with the level of accuracy needed to justify a capital investment, exactly when an improvement will be needed to satisfy demand level.

For these reasons, the Seligman Airport Master Plan has been developed as a demand-based plan. The Master Plan projects various activity levels for short, intermediate, and long term planning horizons. When activity levels begin to reach or exceed the level of one of the planning horizons, the Master Plan suggests planning begin to consider the next planning horizon level of demand. This provides a level of flexibility in the Master Plan, as the development program can be accelerated or slowed to meet demand. This can extend the time between Master Plan updates.

A demand-based Master Plan does not specifically require implementation of any of the demand-based improvements. Instead, it is envisioned that implementation of any Master Plan improvement would be examined against demand levels prior to implementation. In many ways, this Master Plan is similar to a community's general plan. The Master Plan establishes a plan for the use of the airport facilities consistent with potential aviation needs and the capital needs required to support that use. However, individual projects in the plan are not implemented until the need is demonstrated and the project is approved by Yavapai County.

CAPITAL NEEDS AND COST SUMMARIES

Once the specific needs for the airport have been established, the next step is to determine a realistic schedule and costs for implementing each project. The capital needs presented in this chapter outline the costs and timing for implementation. The program outlined on the following pages has been evaluated from a variety of perspectives and represents the culmination of a comparative analysis of basic budget factors, demand, and priority assignments.

The recommended improvements are grouped into three planning horizons: short, intermediate, and long term. Each year, Yavapai County should re-examine the priorities for funding in the short-term period, adding or removing projects on the capital programming lists. **Table 5A** summarizes the key activity milestones for each planning horizon.

TABLE 5A
Planning Horizon Activity Levels
Seligman Airport

	2003	Short Term	Intermediate Term	Long Term
Based Aircraft	1	2	4	10
Annual Operations	3,500	6,000	10,000	15,000

While some projects will be demand-based, others will be dictated by design standards, safety, or rehabilitation needs. In putting together a listing of projects, an attempt has been made to include anticipated rehabilitation needs through the planning period, and capital replacement needs. However, it is difficult to project with certainty, the scope of such projects when looking 10 or more years into the future.

Exhibit 5B summarizes capital needs for Seligman Airport through the planning period of this Master Plan. An estimate has been included with each project of federal/state and state funding eligibility, although none of these amounts are guaranteed. Federal funding will not be available until/unless the airport is included in the *National Plan of Integrated Airports* (NPIAS).

As will be discussed in greater detail later in this chapter, the primary advantage of being included in the NPIAS is the availability of more discretionary dollars than currently available by the Arizona Department of Transportation - Aeronautics Division (ADOT) grants. The ADOT program only has several million dollars available each year, whereas, the federal program has had more than $3.0 billion dollars available annually to airports nationwide over the past four years. Additionally, most NPIAS general aviation airports qualify for an annual entitlement grant. The amount

of the grant ranges upward to an annual limit of $150,000 which can be used for federally-eligible projects.

Individual project cost estimates account for engineering and other contingencies that may be experienced during implementation of the project and are in current (2004) dollars. Due to the conceptual nature of a Master Plan, implementation of capital improvement projects should occur only after further refinement of their design and costs through engineering and/or architectural analyses. Capital costs in this chapter should be viewed only as estimates subject to further refinement during design. Nevertheless, these estimates are considered sufficient for performing the feasibility analyses in this chapter.

SHORT TERM CAPITAL NEEDS

The short term planning horizon is the only planning horizon correlated to time. This is because development within this initial period is concentrated on the most immediate needs of the airfield and landside areas. Year-to-year funding assistance for small general aviation airports such as Seligman Airport is many times difficult to obtain from either the FAA or ADOT. Moreover, annualized grants require annualized local match funds. In many cases for communities sponsoring small general aviation airports, annual local funds are not available for general aviation airports. For this reason, the short term program presents a grouping of projects which will allow the County to pursue projects as needed and as funds become available. The projects are prioritized based on what is believed to be the most critical needs.

Short term projects, generally associated with those necessary for the next five years, are listed in the order of perceived importance at the time of completing this document. It is not uncommon for those needs to change with changing demand which could spur the need to expedite or delay specific projects. Short term capital needs presented on **Exhibit 5B** are estimated at $304,000.

A focus of the short term planning horizon is improving the airfield to meet FAA standards. As previously mentioned, the current airfield layout does not conform to ARC B-II standards for RSA and OFA. The existing perimeter fence obstructs the OFA at both ends and along the southwestern portion of the airport. Moreover, the RSA beyond the northeast end of the runway is obstructed by a drainage channel.

The short term CIP includes projects that will relocate the fencing. The southwestern OFA improvement project will require placing the fence on property not currently owned by the airport. The land is currently owned by the Navajo Nation. The short term plan considers obtaining an easement that would allow for the fence relocation. Later, the land is planned for fee simple acquisition. If possible, fee simple acquisition would be ideal in the short term.

The fence at the southwest end of the runway is planned to be rerouted along the Route 66 right-of-way, outside of the

PROJECT	TOTAL COST	ADOT/FAA SHARE	LOCAL SHARE
SHORT TERM PROGRAM (0 to 5 Years)			
1. Improve Runway 4 OFA - Relocate Fencing	$13,000	$12,350	$650
2. Install Self-serve Fuel Farm	60,000	0	60,000
3. Conduct SWPP, Drainage, & Hazardous Waste Studies	75,000	71,250	3,750
4. Improve Runway 22 RSA & OFA - Drainage/Fencing	60,000	57,000	3,000
5. Acquire Easement for Southwest Fencing Relocation	25,000	23,750	1,250
6. Relocate Southwest Perimeter Fencing (Improve OFA)	51,000	48,450	2,550
7. Construct Hangar Access Taxiway - Phase I	95,000	90,250	4,750
8. Install AWOS	50,000	50,000	0
Subtotal Short Term	$429,000	$353,050	$75,950
INTERMEDIATE TERM PROGRAM (6-10 years)			
1. Acquire Land for Southwest OFA (approx. 16.6 acres)	$40,000	$38,000	$2,000
2. Earthwork/Fencing to Improve OFA and Transitional Surfaces	70,000	66,500	3,500
3. Construct Hangar Access Taxiway - Phase II	115,000	109,250	5,750
4. Pavement Maintenance - Apron	32,500	30,875	1,625
Subtotal Intermediate Term	$257,500	$244,625	$12,875
LONG TERM PROGRAM (11 to 20 Years)			
1. Construct Terminal Building	$125,000	$0	$125,000
2. Relocate Airport Access Road/Construct Parking Lot	104,000	98,800	5,200
3. Construct Water Storage and Distribution Facility	500,000	0	500,000
4. Construct Wash Rack	35,000	33,250	1,750
5. Conduct Environmental Assessment for Runway Extension	250,000	237,500	12,500
6. Acquire Land for Runway/Taxiway Extension (62 ac.)	186,000	176,700	9,300
7. Extend Runway/Parallel Taxiway 1,900' Northeast	1,660,000	1,577,000	83,000
8. Construct Hangar Access Taxiway - Phase III	360,000	342,000	18,000
9. Pavement Maintenance - Runway 4-22/Parallel Taxiway	190,000	180,500	9,500
Subtotal Long Term	$3,410,000	$2,645,750	$764,250
TOTAL PROGRAM COSTS	***$4,096,500***	***$3,243,425***	***$853,075***

SELIGMAN AIRPORT

Exhibit 5B
CAPITAL IMPROVEMENT PROGRAM

runway OFA. The northeastern fence line will be rerouted north and east, outside the RSA. Also, the plan considers improving the drainage channel with concrete pipe and earthwork to cover the channel. As a result of these changes, the RSA and OFA will conform to FAA standards. These projects will also include a storm water pollution prevention (SWPP) plan and other drainage and hazardous waste studies.

The short term program also includes two projects that are aimed at improving landside amenities and aviation services. Construction of a 10,000-gallon self-serve, 100LL fuel facility is proposed at the southwestern portion of the existing apron. This facility would allow for credit card fuel purchases 24 hours-per-day. The plan also includes the construction of a hangar access taxiway which would allow for private hangar development. Both of these projects would enhance the airport and could be an attractant for based aircraft.

The short term planning horizon also includes the installation of the Automated Weather Observation System (AWOS). The AWOS will provide automated weather observation and reporting at the airport which will also enhance the possibility for an instrument approach procedure to the airport.

Short term projects presented on Exhibit 5B and graphically depicted on Exhibit 5C have been estimated at $429,000 total cost. Of that total, approximately $75,950 will be required to be provided by the County.

INTERMEDIATE TERM CAPITAL NEEDS

Developments within the intermediate term planning horizon are improving airfield FAA standards and landside facilities for both transient and locally-based aircraft.

The short term plan considered acquiring an easement which would allow for relocating the northwestern perimeter fence outside the runway OFA. It was assumed that the fee simple acquisition of this land would not be feasible in the first five years. The intermediate term plan considers acquiring the property in fee so that the County would maintain full control. Controlling this property will allow the County to excavate terrain currently obstructing the transitional surfaces defined by F.A.R. Part 150. This project could better situate the airport for an instrument approach to Runway 22 as planned.

Other projects in the intermediate term planning horizon include slurry sealing the apron and construction of a hangar access taxiway. The taxiway would allow for the construction of additional hangar facilities. **Exhibit 5C** graphically depicts development staging of projects in the intermediate term. **As proposed, projects in the intermediate term program are estimated to cost $257,500 with $12,875 being the County's share.**

LONG TERM CAPITAL NEEDS

The long term planning horizon considers several projects which would

be needed if demand levels dictate. Among those projects which will require demand are construction of an airport terminal building, relocation of the terminal road, construction of a new parking lot, construction of hangar access taxiways, and extension of the runway/taxiway system.

In order to extend the runway as proposed, additional land needs to be acquired. The plan considers the acquisition of approximately 62 acres of land. The acquisition would allow for the runway and parallel taxiway to be extended 1,900 feet to the northwest and provide adequate RSA and OFA for ARC B-II aircraft.

The long term plan considers the construction of an on-site water facility. The facility would include a water tank, which could amply support water needs of proposed landside development and fire fighting.

Other projects included in the long term program are the construction of an aircraft wash rack, and pavement maintenance of the existing portion of Runway 4-22 and the parallel taxiway. **Long term projects presented on Exhibit 5B and graphically depicted on Exhibit 5C have been estimated at $3.4 million total cost. Of that total, approximately $764,250 will be required to be provided by the County.**

CAPITAL IMPROVEMENTS FUNDING

Financing capital improvements at the airport will not rely exclusively upon the financial resources of Yavapai County. Capital improvement funding is available through various grants-in-aid programs at both the federal and state levels. The following discussion outlines the key sources for capital improvement funding.

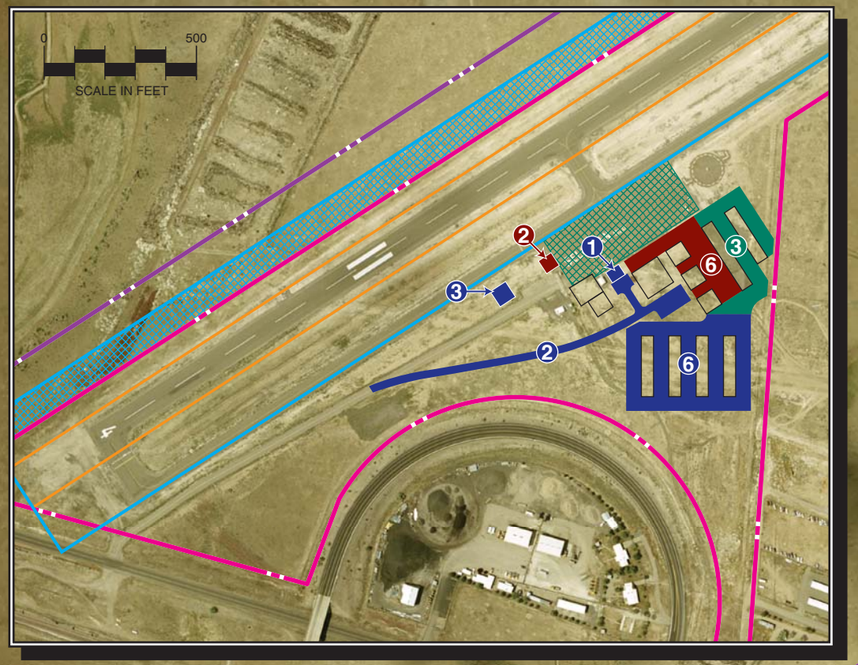
FEDERAL GRANTS

Through federal legislation over the years, various grant-in-aid programs have been established to develop and maintain a system of public airports throughout the United States. The purpose of this system and its federally-based funding is to maintain national defense and promote interstate commerce. The most recent legislation was enacted in late 2003 and is entitled the *Century of Aviation Reauthorization Act* or *Vision 100*.

The four-year Bill covers FAA fiscal years 2004, 2005, 2006, and 2007. This Bill presented similar funding levels to the previous Bill - Air 21. Airport Improvement Program (AIP) funding was authorized at $3.4 billion in 2004, $3.5 billion in 2005, $3.6 billion in 2006, and $3.7 billion in 2007. This new Bill provides the FAA and ADOT the opportunity to plan for longer term projects versus simple one-year reauthorizations.

The source for *Vision 100* funds is the Aviation Trust Fund. The Aviation Trust Fund was established in 1970 to provide funding for aviation capital investment programs (aviation development, facilities and equipment, and research and development). The Trust Fund also finances the operation of the FAA. It is funded by user fees,

02MP20-5C-8/23/04



LEGEND

- Existing Airport Property Line
- Ultimate Property Line
- Ultimate Airfield Pavement
- Ultimate Building
- Ultimate Road/Parking
- Runway Safety Area (RSA)
- Obstructed RSA
- Object Free Area (OFA)
- Obstructed OFA
- Runway Protection Zone (RPZ)
- Short Term Program
- Intermediate Program
- Long Term Program

SHORT TERM PROGRAM (0 to 5 Years)

1. Improve Runway 4 OFA - Relocate Fencing
2. Install Self-serve Fuel Farm
3. Improve Runway 22 RSA & OFA - Drainage/Fencing
4. Acquire Easement for Northwest Fencing Relocation
5. Relocate Northwest Perimeter Fencing (Improve OFA)
6. Construct Hangar Access Taxiway - Phase I
7. Install AWOS

INTERMEDIATE TERM PROGRAM (6-10 years)

1. Acquire Land for Northwest OFA (approx. 16.6 acres)
2. Earthwork to Improve OFA and Transitional Surfaces
3. Construct Hangar Access Taxiway - Phase II
4. Pavement Maintenance - Apron

LONG TERM PROGRAM (11 to 20 Years)

1. Construct Terminal Building
2. Relocate Airport Access Road/Construct Parking Lot
3. Construct Wash Rack
4. Acquire Land for Runway/Taxiway Extension (62 ac.)
5. Extend Runway/Parallel Taxiway 1,900' Northeast
6. Construct Hangar Access Taxiway - Phase III
7. Pavement Maintenance - Runway 4-22/Parallel Taxiway

NORTH

0 800 1600

SCALE IN FEET

Date of Photo: 5/25/03

SELIGMAN AIRPORT

Exhibit 5C
DEVELOPMENT STAGING

taxes on airline tickets, aviation fuel, and various aircraft parts.

Funds are distributed each year by the FAA from appropriations by Congress. A portion of the annual distribution is to primary commercial service airports based upon enplanement levels. If Congress appropriates the full amounts authorized by *Vision 100*, eligible general aviation airports could receive up to $150,000 of funding each year (NPIAS inclusion required for general aviation entitlement funding). The remaining AIP funds are distributed by the FAA based upon the priority of the project for which they have requested federal assistance through discretionary apportionments. A National Priority Ranking System is used to evaluate and rank each airport project. Those projects with the highest priority are given preference in funding.

Should Seligman Airport eventually be included in the NPIAS, each airport project for Seligman Airport would be required to follow this procedure and compete with other airport projects in the state for AIP state apportionment dollars and across the country for other federal AIP funds. An important point to consider is that, unlike entitlement dollars for commercial service airports, most funding for Seligman Airport would not be guaranteed.

General aviation airport development that meets the FAA's eligibility requirements can receive 95 percent federal funding assistance from *Vision 100*. Property acquisition, airfield improvements (e.g., runway extensions), aprons, perimeter service roads, and access road improvements are examples of eligible items. General aviation terminal buildings and fueling facilities are not generally eligible, however, *Vision 100* has made provisions for limited inclusion. The new Bill would allow for grant funding assistance for aircraft hangar and fuel farm construction if the airport is not in need of other more important projects. It should be noted that grant assistance for hangars and fuel farms will likely be very low priority items, thus, could be difficult to receive.

As evident from the airport development schedule and cost summaries, Yavapai County could benefit significantly from federal funding. Federal funding extends the amount of state dollars available for airport funding and guarantees a limited amount of entitlement dollars each year (assuming the current program contained in *Vision 100* is continued through the planning period).

As previously mentioned, the airport is not included in the current federal system of airports as defined in the NPIAS. Thus, the airport is not eligible for federal grant-in-aid programs. It is recommended that the County pursue inclusion in the NPIAS in order to be eligible for federal funding in the future. Until it is included, Seligman Airport and its sponsor, Yavapai County, are only eligible for state grant funding assistance.

If included in the NPIAS, the airport could be eligible for annual entitlement funds, ranging up to $150,000 annually, and other discretionary grants. The annual entitlement amount is based on the NPIAS's projected CIP needs for the airport. Although the entitlement funds are available annually, they may be

banked up to three years if local funds are not available or if no project is planned. Thus, Yavapai County could bank three years worth of FAA entitlement funds for a single year's grant of up to $450,000. The local match requirement would be $22,500. If ADOT funds were used to help match the local share, the County's share could be reduced to only $11,250. Again, the airport must be part of the NPIAS to become eligible for entitlement funds.

FAA FACILITIES AND EQUIPMENT PROGRAM

The Airway Facilities Division of the FAA administers the national Facilities and Equipment (F&E) Program. This annual program provides funding for the installation and maintenance of various navigational aids and equipment for the national airspace system and airports. Under the F&E program, funding is provided for FAA airport traffic control towers, enroute navigational aids, and on-airport navigational aids such as approach lighting systems. Assuming inclusion in the NPIAS, as activity levels and other developments warrant, the airport may be considered by the FAA Airways Facilities Division for the installation and maintenance of navigational aids through the F&E program. The airport cannot receive F & E grants until it is included in the NPIAS.

STATE AID TO AIRPORTS

In support of the state airport system, the State of Arizona also participates in airport improvement projects. The source for state airport improvement funds is the Arizona Aviation Fund. Taxes levied by the state on aviation fuel, flight property, aircraft registration tax, and registration fees, (as well as interest on these funds) are deposited in the Arizona Aviation Fund. The Transportation Board establishes the policies for distribution of these state funds.

Under the State of Arizona grant program, an airport can receive funding for one-half (five percent) of the local share of projects receiving federal AIP funding. The state also provides 90 percent funding for State of Arizona primary airport projects which are typically not eligible for federal AIP funding or have not received federal funding. Secondary airports in the state, such as Seligman Airport, can be funded at 95 percent of the project cost since these airports are not included in the NPIAS. This funding level is the same as the newly passed *Vision 100* Bill.

State Airport Loan Program

The Arizona Department of Transportation-Aeronautics Division (ADOT) Airport Loan Program was established to enhance the utilization of state funds and provide a flexible funding mechanism to assist airports in funding improvement projects. Eligible projects include runway, taxiway, and apron improvements; land acquisition, planning studies, and the preparation of plans and specifications for airport construction projects, as well as revenue generating improvements such as hangars and fuel storage facilities. Projects which are not currently eligible

for the State Airport Loan Program are considered if the project would enhance the airport's ability to be financially self-sufficient.

There are three ways in which the loan funds can be used: Grant Advance, Matching Funds, or Revenue Generating Projects. The Grant Advance loan funds are provided when the airport can demonstrate the ability to accelerate the development and construction of a multi-phase project. The project(s) must be compatible with the Airport Master Plan and be included in the ADOT 5-year Airport Development Program. The Matching Funds are provided to meet the local matching fund requirement for securing federal airport improvement grants or other federal or state grants. The Revenue Generating funds are provided for airport-related construction projects that are not eligible for funding under another program.

LOCAL FUNDING

The balance of project costs, after consideration has been given to grants, must be funded through local resources. Assuming federal funding, this essentially equates to 2.5 percent of the project costs if all eligible FAA and state funds are available. If only ADOT grants were available, the local share would be five percent of the project, or five percent higher, or ten percent of the eligible project amount.

There are several alternatives for local financing options for future developments at the airport, including airport revenues, direct funding from the County, issuing bonds, and leasehold financing. These strategies could be used to fund the local matching share, or complete the project if grant funding cannot be arranged.

The capital improvement program has assumed that some landside facility development would be completed privately, while other developments (namely T-hangars, the aircraft wash rack, and public terminal building) would be completed by Yavapai County. Yavapai County would complete the necessary infrastructure improvements as this development is grant-eligible.

There are several municipal bonding options available to Yavapai County including: general obligation bonds, limited obligation bonds, and revenue bonds. General obligation bonds are a common form of a municipal bond which is issued by voter approval and is secured by the full faith and credit of the County. County tax revenues are pledged to retire the debt. As instruments of credit, and because the community secures the bonds, general obligation bonds reduce the available debt level of the community. Due to the community pledge to secure and pay general obligation bonds, they are the most secure type of municipal bond and are generally issued at lower interest rates and carry lower costs of issuance. The primary disadvantage of general obligation bonds is that they require voter approval and are subject to statutory debt limits. This requires that they be used for projects that have broad support among the voters, and that they be reserved for projects that have the highest public priorities.

In contrast to general obligation bonds, limited obligation bonds (sometimes

referred to as a self-liquidating bonds) are secured by revenues from a local source. While neither general fund revenues nor the taxing power of the local community is pledged to pay the debt service, these sources may be required to retire the debt if pledged revenues are insufficient to make interest and principal payments on the bonds. These bonds still carry the full faith and credit pledge of the local community and, therefore, are considered, for the purpose of financial analysis, as part of the debt burden of the local community. The overall debt burden of the local community is a factor in determining interest rates on municipal bonds.

There are several types of revenue bonds, but in general they are a form of municipal bond which is payable solely from the revenue derived from the operation of a facility that was constructed or acquired with the proceeds of the bonds. For example, a lease revenue bond is secured with the income from a lease assigned to the repayment of the bonds. Revenue bonds have become a common form of financing airport improvements. Revenue bonds present the opportunity to provide those improvements without direct burden to the taxpayer. Revenue bonds normally carry a higher interest rate because they lack the guarantees of general and limited obligation bonds.

Leasehold financing refers to a developer or tenant financing improvements under a long term ground lease. The obvious advantage of such an arrangement is that it relieves the community of all responsibility for raising the capital funds for improvements. However, the private development of facilities on a ground lease, particularly on property owned by a municipal agency, produces a unique set of problems.

In particular, it is more difficult to obtain private financing as only the improvements and the right to continue the lease can be claimed in the event of a default. Ground leases normally provide for the reversion of improvements to the lessor at the end of the lease term, which reduces their potential value to a lender taking possession. Also, companies that want to own their property as a matter of financial policy may not locate where land is only available for lease. Yavapai County has used long term lease arrangements successfully to finance capital improvements at the airport in the past.

RATES AND FEES ANALYSIS

Seligman Airport is not currently supported by any facility rates or fees. In fact, the only facility which could support revenue collection would be the aircraft parking apron. The recommended concept will generate the opportunity for the County to establish revenue streams. Obviously, the County, having not had to establish a rates/fees structure in the past, will have to consider establishing a structure and collection mechanism sometime in the future.

The FAA places several stipulations on rates/fees establishment and collection, however, two primary considerations need to be addressed here. First, the rates/fees must be fair, equally applied, and resemble market value. Second,

the rates/fees collected must be returned to and used only by and/or for the airport. In other words, the revenues generated by airport operations cannot be diverted to the general use of Yavapai County (or any airport sponsor). The FAA requires funds to be used at airports as these funds are many times needed to either support the day-to-day operational costs or offset capital improvement costs.

Given its remote location, the rates/fees structure at Seligman will not necessarily need to be fully competitive with other airports in the region or the State of Arizona. If the costs are set too high, some users will choose other airports such as H.A. Clark Memorial Field in Williams or Valle Airport in Peach Springs. If the rates/fees are set too low, some facilities will not be capable of being amortized, thus, requiring a subsidy from the County.

As part of this study, a rates and fees survey of other regional airports was conducted. The results of the study are presented in **Table 5B**. The surveys requested information regarding rate structures for several categories including hangar and lease rates, fuel charges (flowage fees and average price markup), and tie-down fees (nightly and monthly rates).

The table presents financial information for six regional airports. Two airports, Flagstaff Pulliam Airport and Ernest A. Love Field in Prescott, provide both commercial airline and general aviation services. The other airports are dedicated for general aviation services. These airports provide a reasonable comparison for rental and lease rates for facilities which could be based at Seligman Airport in the future. Obviously, the only comparable facility currently provided at Seligman is for aircraft tie-downs. It should be noted that collection of fees for tie-downs or other rentals will require day-to-day management of the facility.

Currently, Seligman Airport does not have any aircraft hangar facilities for aircraft storage. At some airports, hangar facilities are constructed by the airport sponsor, while at other airports, hangars are built by private entities. In some cases, airports have both public and private hangar facilities available. Hangars can be expensive to construct and offer minimal return on investment in the short term. This is especially true for T-hangars which could cost between $20,000 and $30,000 per unit to construct. In order to amortize the cost of constructing hangars, lease rates should be developed at a minimum to recover development and finance costs. In the case of a T-hangar, the rate would be approximately $200 per month (assuming $20,000 construction cost, with an amortization schedule at five percent for 15 years).

As presented in the table, the other regional airports offer a variety of hangar facilities for similar rental rates. The hangar rates listed below include the rates offered by the airport sponsor. Other rates were not available as private entities own the hangars. For example, Flagstaff Pulliam Airport has T-hangar facilities, however, none provided by the airport sponsor. The private lease rates were not obtained.

At Seligman Airport, hangar construction should first consider private development. This allows the

airport to lease a parcel of land to the developer, who in turn will construct, maintain, and operate the hangar facilities. Private hangar development allows the County the freedom of day-to-day lease functions, while generating land lease revenues from the developer. The land lease rates for other regional airports vary between $0.04 per square-foot monthly and $0.28 per square-foot annually. It should be noted that land leases should include the opportunity to periodically review the lease and adjust the rate according to the consumer price index (CPI) increase. Moreover, many leases will include a reversion clause which stipulates that any leasehold improvement will revert the airport at some point in the future (typically 20 years or more).

TABLE 5B
Rates and Fees Analysis

	AIRPORT THREE LETTER IDENTIFIER					
	FLG	**P32**	**SEZ**	**GCN**	**PRC**	**40G**
Hangar Rental Rates (Monthly Flat Rate or $ per square foot)						
Conventional Hangar	$235	N/A	$600	$0.00	$211	N/A
T-Hangar	N/A	N/A	$225	$0.00	$131	$150 $200 $400
Shade Hangar	$85	N/A	$60	$0.00	$89.00	$0.00
Tie-down Rates (Flat Rates)						
Daily Rates						
Single Engine	$5.40	$3.00	$7.50	N/A	$5.50	N/A
Multi-engine	$8.00	$3.00	$10.00	N/A	$6.50	N/A
Jet	$25.00	$3.00	$15.00	N/A	N/A	N/A
Rotor	$8.00	$3.00	$10.00	N/A	N/A	N/A
Monthly Rates						
Single Engine	$40.00	$30.00	$50.00	$30.00	$38.00	N/A
Multi-engine	$40.00	$30.00	$50.00	$40.00	$38.00	N/A
Jet	$40.00	$30.00	$50.00	N/A	$73.00	N/A
Rotor	$40.00	$30.00	$50.00	$40.00	N/A	N/A
Generalized Land Lease for Aviation Development						
Rate (per s.f.)	$0.28/yr.	$0.04/mo.	$0.04/mo.	$0.00	$0.15/mo.	N/A
Fuel Services						
Self Service (Yes or No)	Y	N	N	N	N	N
Fuel Flowage Fee	$0.00	$0.08	$0.02	$0.00	$0.00	N/A
Mark-up per gallon	N/A	N/A	$0.80	$0.00	$0.65	$0.85

Airport Identifier Key:
FLG - Flagstaff Pulliam Airport
P32 - H.A. Clark Memorial Field Airport - Williams, Arizona
SEZ - Sedona Airport
GCN - Grand Canyon National Park Airport
PRC - Ernest A. Love Field Airport - Prescott, Arizona
40G - Valle Airport
Note: N/A refers to either unavailable information or facility/service not provided at airport.

PLAN IMPLEMENTATION

The successful implementation of the Seligman Airport Master Plan will require sound judgment on the part of Yavapai County with regard to the implementation of projects proposed to meet future activity demands, while maintaining the existing infrastructure and improving this infrastructure to support new development. While the projects included in the capital improvement program have been broken into short, intermediate, and long term planning periods, the County will need to consider the scheduling of projects in a flexible manner and add new projects from time-to-time to satisfy safety or design standards, or newly created demands.

In summary, the planning process requires that Yavapai County continually monitor the need for new or rehabilitated facilities, since applications for eligible projects must be submitted to the FAA and the state each year. Yavapai County should continually monitor, with the FAA and the state, the projects which are required for safety and security.

The Master Plan and recommended concept have been developed in conjunction with the PAC and Yavapai County, and are designed to assist the County in making decisions on future development and growth of Seligman Airport. This plan provides the necessary development to accommodate and satisfy the anticipated growth over the next twenty years and beyond.

Flexibility will be very important to future development at the airport. Activity projected over the next twenty years may not occur as predicted. The plan has attempted to consider demands that may be placed on the airport even beyond the twenty-year planning horizon to ensure that the facility will be capable of handling a wide range of circumstances. The recommended plan provides the Town with a general guide that if followed can maintain the airport's long term viability and allow the airport to continue to provide air transportation services to the region.